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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/989,027	11/21/2001	Nobuo Yamasaki	216349US2	9844

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EXAMINER
LIU, MING HUN

ART UNIT	PAPER NUMBER
2697	

DATE MAILED: 09/17/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/989,027	YAMASAKI, NOBUO	
	Examiner	Art Unit	
	Ming-Hun Liu	2697	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-19 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-19 is/are rejected.

7)☒ Claim(s) 8 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. Claim 8 is objected to because SRAM is an acronym that has not yet been defined. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-5 and 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 58-143389 to Hoshi.

In reference to claim 1, it can be seen from figure 4 that Hoshi discloses a display device comprising a memory device-built-in pixel portion including a plurality of data lines and a plurality of scan lines arranged in a matrix, a plurality of pixels disposed on respective intersections of the both lines (paragraph 1, lines 1-6), a plurality of pixel switching elements electrically conducting the data lines and the pixels based on scan signals supplied to the scan lines to write graphic data supplied to the data lines into the pixels (page 1, lines 6-9), and a plurality of memory devices storing the graphic data supplied to the data lines and being constituted to be capable of supplying the graphic data stored to the pixels corresponding thereto (figure 4, items 14 and 15). Hoshi also discloses a data driver and a scan driver for controlling the write of the graphic data supplied to the data lines into the pixels in order to perform a first display (page 6, lines 7-9), a memory device driver for controlling the write of the graphic data

held in the memory devices into the pixels in order to perform a second display, a power source voltage generating unit for supplying a power source voltage to the data driver and the scan driver (page 7, lines 21-26). Hoshi does not however, explicitly describe a power source voltage control circuit for stopping a supply of the power source voltage from the power source voltage generating unit during a period of the second display, however such components are implied as Hoshi describes the two states: "voltage waveform applied state and a no voltage applied state in compliance with an output of the memory cell on page 2, lines 4-5. Hoshi describes a voltage waveform and as one skilled in the art would attest, a power source voltage control circuit is a component inherent to the generation of a proper waveform. It would have been obvious to one skilled in the art to incorporate a voltage control circuit to insure the voltage generated would be the correct value for proper functioning with rest of the circuit.

In reference to claim 2, Hoshi discloses a power source voltage control circuit that stops the supply of the power source voltage from the power source voltage generating unit to the data driver during the period of the second display (page 7, lines 23-25).

In reference to claim 3, though not explicitly stated by Hoshi, Hoshi acknowledges the power saving features of the second display and understands the power saving potential as outlined on page 9, lines 16-20. As one skilled in the art would understand, turning power off to peripheral circuits (during the second display) as referred to by Hoshi in the passage, would definitely include essential power driving elements such as data driving and scan driving circuit.

In reference to claim 4, Hoshi does not explicitly disclose that the power source voltage control circuit is constituted of a TFT switch and electrically disconnects the power source voltage generating unit and the data driver based on a mode switching signal supplied from an

external control circuit during the period of the second display. However Hoshi, as explained in the rejection of claim 3, does describe the need to turn off the power to peripheral circuits in order to conserve energy. As one skilled in the art would understand, components such as a switch and switching signals are all necessary elements in shutting power off into a circuit. It would have been obvious to one skilled in the art to incorporate such components in order to insure the power functionality of switching off power to peripheral circuits.

Claim 5 is rejected on the same basis as the rejection of claim 4, as the scan driver unit is also considered as a peripheral power-consuming unit.

Claim 7, is anticipated as Hoshi clearly describes The display device according to claim 1, wherein each of the pixels is a liquid crystal pixel having a liquid crystal layer held between a pixel electrode and an opposite electrode (paragraph 1, lines 4-6).

Referring to claim 8, Hoshi discloses a display device where each of the memory devices is an SRAM (page 4, line 7).

In reference to claim 9, it can be seen from figure 4 that the SRAM includes two inverters and one SRAM switching element.

Claim 10 is rejected on the same grounds as the rejection of claims 1 and 2.

Claims 11 and 12 are rejected on grounds similar to the rejection of claims 3 and 4.

4. Claims 6 and 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoshi and US Patent 6,166,714 to Kishimoto.

In reference to claim 6, Hoshi does not use a DC/DC converter in his invention, however as seen in Kishimoto, a DC/DC converter is commonly used in driving an LCD panel. It would

have been obvious to one skilled in the art to use a DC/DC converter to supply the necessary voltage levels required in the circuit.

In reference to claim 13, the components described in the power source voltage generating unit are obvious if not inherent to the DC/DC converter, and as mentioned in the rejection of claim, it would have been obvious to incorporate a DC/DC converter into the claimed invention. Elements such as the switching boosting unit for boosting an input voltage, an output smoothing unit for smoothing the voltage boosted in the switching boosting unit to set the voltage as an output voltage, a comparator for controlling a boosting operation of the switching boosting unit in response to a comparison result of the output voltage with a reference voltage, are standard to the specifications of a converter (column 2, lines 16-19). The remaining portions of the claim are just extensions of the argument of turning off power to peripheral circuitry to converse power. It would have been obvious to one skilled in the art to understand that the boosting and comparator circuits drain power and need to be turned off to conserve power during the second display period.

In reference to claims 14 and 15, there is no disclosed criticality as to why the components need to be connected in the fashion described. The main goal is to turn the power off to the boosting and comparisons circuits and one skilled in the art would have had enough knowledge to design a circuit to perform such a duty.

Claim 16 is rejected on the same grounds as the rejection of claim 6.

Claim 17 is rejected on the same grounds as the rejection of claim 7.

Claim 18 is rejected on the same grounds as the rejection of claim 8.

Claim 19 is rejected on the same grounds as the rejection of claim 9.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent 5,471,225 to Parks: LCD with dual invertors and power conservation circuit

US Patent 5,534,884 to Mase et al: LCD with power conservation using memory

US Patent 5,867,138 to Moon: DC/DC converter with signal boost and stabilization

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ming-Hun Liu whose telephone number is 703-305-8488. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on 703-305-3885. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Ming-Hun Liu

JOSEPH MANCUSO
PRIMARY EXAMINER